



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/540,574

06/24/2005

Takeshi Kato

017700-0175

6415

23392 7590 06/25/2008

FOLEY & LARDNER
2029 CENTURY PARK EAST
SUITE 3500
LOS ANGELES, CA 90067

EXAMINER

VIJAYAKUMAR, KALLAMBELLA M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

06/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,574	Applicant(s) KATO ET AL.	
	Examiner KALLAMBELLA VIJAYAKUMAR	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date | 6) <input type="checkbox"/> Other: _____ |

06/24/2005; 11/15/2006; 03/06/2007; 07/16/2007; 11/28/2007;

DETAILED ACTION

- This is a 371 of PCT/JP 04/10930 filed 07/30/2004. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
- The preliminary amendment filed 06/24/2005 has been entered. Claims 1-6 are currently pending with the application.
- The information disclosure statement (IDS) submitted on 11/28/2007, 07/16/2007, 03/06/2007, 11/15/2006 and 06/24/2005 are in compliance with the provisions of 37 CFR 1.97, and considered by the examiner.

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1793

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 4-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Li et al (US 6,247,224).

Li et al teach a multifilamentary tape comprising a BSCCO-2223 oxide superconductor with a filament density of $\geq 95\%$ theoretical density (Abstract, CI 15, Ln 23-33). The BSCCO-2223 oxide contained the elements Bi:Pb:Sr:Ca:Cu in the ratio of 1.74:0.34:1.91:2.03:3.07 (CI 21-22, Ex-1). All the limitations of the instant claims are met.

The reference is anticipatory, in so far as it is sintered and the specification does not explain any difference between 'density' and 'sintering density'.

In the alternative that the disclosure by Li et al be insufficient to anticipate the limitations of instant claims, it would have nonetheless been obvious to the skilled artisan over the prior art disclosure to produce the claimed wire because the reference teaches each of the claimed ingredients within the structure including attaining higher densities by high reduction rolling (CI-15, Ln 23-25), for the same utility as superconductor tapes. The burden is upon the applicant to prove otherwise. In re Fitzgerald, 619 F.2d 67, 205 USPQ594 (CCPA 1980).

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 6,247,224).

The disclosure on the composition and structure of the superconducting tape by Li et al as set forth in rejection-1 under 35 USC 102(b)/103(a) is herein incorporated.

The prior art is silent about the density of the tape being at least 99%.

However, the prior art disclosure of $\geq 95\%$ theoretical density encompasses a range of ~ 95 to $\sim 100\%$, and in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 6,247,224).

The disclosure on the composition and structure of the superconducting tape by Li et al as set forth in rejection-1 under 35 USC 102(b)/103(a) and rejection-2 under 35 USC 103(a) are herein incorporated.

The prior art fails to teach a device containing the superconducting per claims 1-3.

However, it would be obvious to a person of ordinary skill in the art to fabricate a transmission line or transformer or an electric motor with the prior art superconducting tape with predictable results and reasonable expectation of success, because the prior art discloses the superconductor wire/article may be used in a variety of applications including, but not limited to the transmission of electricity and operation of motors (CI-9, Ln 21-25), and prima facie obvious over instant claimed device.

4. Claim 4 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ikoma et al (US 5,045,527).

Ikoma et al teach a superconducting tape and multifilamentary article comprising a BSCCO-2223 oxide superconductor with a density of $\sim 95\%$ theoretical. The BSCCO-2223 oxide contained the elements Bi:Pb:Sr:Ca:Cu in the ratio of 1.4:0.6:2:2:3 (CI-2, Ln 13-16; CI-24, Ex-23; Fig-16; Abstract). All the limitations of the instant claims are met.

The reference is anticipatory.

In the alternative that the disclosure by Ikoma et al be insufficient to anticipate the limitations of instant claims, it would have nonetheless been obvious to the skilled artisan over the prior art disclosure

Art Unit: 1793

to produce the claimed wire because the reference teaches each of the claimed ingredients within the structure including attaining higher densities (CI-5, Ln 41-51), for the same utility as superconductor tapes. The burden is upon the applicant to prove otherwise. In re Fitzgerald, 619 F.2d 67, 205 USPQ594 (CCPA 1980).

5. Claims 5-6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikoma et al (US 5,045,527).

The disclosure on the composition and structure of the superconducting tape by Ikoma et al as set forth in rejection-4 under 35 USC 102(b)/103(a) is herein incorporated.

The prior art is silent about the density of the tape per the claims.

With regard to claim-5, the prior art disclosure of ~95% theoretical density touches instant claimed at least 95%, and In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

With regard to claim-6, the prior art teaches attaining >90% or more of the theoretical density for the swaged and sintered wire (CI-5, Ln 41-51), and it would have been obvious to a person of ordinary skilled in the art to optimize the process conditions to benefit from increased density and excellent superconductivity by sintering in oxygen atmosphere without the sheath and with reasonable expectation of success in obviously arriving at the claimed densities, because >90% includes the range between 90-100% theoretical density.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikoma et al (US 5,045,527).

The disclosure on the composition and structure of the superconducting tape by Ikoma et al as set forth in rejection-4 under 35 USC 102(b)/103(a) and rejection-5 under 35 USC 103(a) are herein incorporated.

The prior art fails to teach a device containing the superconducting device per claims 1-3.

However, it would be obvious to a person of ordinary skilled in the art to fabricate a transmission line or magnetic coils containing the prior art superconducting tape with predictable results and reasonable expectation of success, because the prior art teaches the superconductor wire/article may be used in those applications (CI-1, Ln 6-10), and prima facie obvious over instant claimed device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALLAMBELLA VIJAYAKUMAR whose telephone number is (571)272-1324. The examiner can normally be reached on M-F 07-3.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 5712721358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KMV/
June 10, 2008.

/Stuart Hendrickson/
Primary Examiner, Art Unit 1793